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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/856,361	05/22/2001	Takehiko Kezuka	P07222US00/L	6882

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EXAMINER

GOUDREAU, GEORGE A

ART UNIT	PAPER NUMBER
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1763

DATE MAILED: 06/13/2003

9

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09-856,361

Applicant(s)

Kozuka et al

Examiner

George Goudreau

Group Art Unit

1763

— The MAILING DATE of this communication appears on the cover sheet beneath the correspondence address —

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, such period shall, by default, expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- ☒ Responsive to communication(s) filed on 3-26-03 (See papers # 7-8)
- ☐ This action is FINAL.
- ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11; 453 O.G. 213.

Disposition of Claims

- ☒ Claim(s) 1-15 is/are pending in the application.
- Of the above claim(s) 14-15 is/are withdrawn from consideration.
- ☐ Claim(s) _____ is/are allowed.
- ☒ Claim(s) 1-12 is/are rejected.
- ☒ Claim(s) 13 is/are objected to.
- ☐ Claim(s) _____ are subject to restriction or election requirement

Application Papers

- ☐ The proposed drawing correction, filed on _____ is ☐ approved ☐ disapproved.
- ☐ The drawing(s) filed on _____ is/are objected to by the Examiner
- ☐ The specification is objected to by the Examiner.
- ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. § 119 (a)-(d)

- ☒ Acknowledgement is made of a claim for foreign priority under 35 U.S.C. § 119 (a)-(d).
- ☒ All ☐ Some* ☐ None of the:
- ☒ Certified copies of the priority documents have been received.
- ☐ Certified copies of the priority documents have been received in Application No. _____.
- ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a))

*Certified copies not received: _____

Attachment(s)

- ☐ Information Disclosure Statement(s), PTO-1449, Paper No(s). _____
- ☒ Notice of Reference(s) Cited, PTO-892
- ☐ Notice of Draftsperson's Patent Drawing Review, PTO-948
- ☐ Interview Summary, PTO-413
- ☐ Notice of Informal Patent Application, PTO-152
- ☐ Other _____

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15. This action will not be made final due to the new grounds of rejection.

16. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

17. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103© and potential 35 U.S.C. 102(f) or (g) prior art under 35 U.S.C. 103(a).

18. Claims 1-12 are rejected under 35 U.S.C. 103(a) as being unpatentable over
Wojtczak et. al. (6,383,410; 6,280,651).

Wojtczak et. al. (6,383,410; 6,280,651) disclose a process for wet etching a BPSG layer, and a thermal SiO₂ layer on a wafer using a solution which is comprised of NH₄F, a chelating agent, and ethylene glycol. The wet etching process is conducted at a temperature of between (20-60) C. The BPSG layer, and the thermal SiO₂ layers are etched at approximately the same rate. Both the BPSG layer, and the thermal SiO₂ layer are etched at a rate between (4-67) angstroms. This is discussed specifically in columns 2-4; and discussed in general in columns 1-6.

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Wojtczak et. al. fail, however, to specifically disclose the following aspects of applicant's claimed invention:

- the specific wet etching process parameters which are claimed by the applicant; and
- the specific presence of H₂O in the etchant

It would have been inherent that the etching solution used in the process taught above would absorb at least some H₂O vapor from the atmosphere during the etching process. This is based upon the fact that the ethylene glycol used in the etchant is very hygroscopic, and there is always H₂O vapor present in the atmosphere. The examiner cites the case law listed below of interest to the applicant in this regard.

In re Swinehart (169 U.S.P.Q. 226 (CCPA)) and In re Best (195 U.S.P.Q. 430 (CCPA)) state that when an examiner has reasonable basis for believing that functional characteristics asserted to be critical for establishing novelty in the claimed subject matter may, in fact, be inherent characteristics of the prior art, the examiner possesses the authority to require an applicant to prove that the subject matter shown to be in the prior art does not possess the characteristics relied upon.

It would have been prima facie obvious to employ any of a variety of different wet etching process parameters in the etching process taught above including those which are specifically claimed by the applicant. These are all well known variables in the wet etching art which are known to effect both the rate and quality of the wet etching process. Further, the selection of

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particular values for these variables would not necessitate any undo experimentation which would be indicative of a showing of unexpected results.

Alternatively, it would have been obvious to one skilled in the art to employ the specific wet etching process parameters which are claimed by the applicant in the wet etching process taught above based upon In re Aller as cited below.

“Where the general conditions of a claim are disclosed in the prior art, it is not inventive to discover the optimum or workable ranges by routine experimentation.” In re Aller, 220 F. 2d 454, 105 USPQ 233, 235 (CCPA).

Further, all of the specific process parameters which are claimed by the applicant are results effective variables whose values are known to effect both the rate and the quality of the wet etching process.

19. Claim 13 is objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

20. Applicant's arguments filed 3-26-03' have been fully considered but they are not persuasive.

-Applicant argues the following points regarding the examiner's rejection of his claimed subject matter.

-The Wojtczak et. al. (6,280,651) reference cannot be used as prior art to reject applicant's claims based upon applicant's claimed foreign priority date; and the English

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language translation of applicant's foreign priority document which applicant has now provided. This statement is based upon the assumption that the effective date of Wojtczak et. al. (6,280,651) is 12-16-98' versus the claimed foreign priority date of 11-19-98'.

-The examiner must disagree.

-The effective data of both Wojtczak et. al. references is 12-19-07' based upon the provisional application (60/068,339) from which both Wojtczak et. al. references were filed off of. The examiner has provided a copy of US patent 6,383,410 to document this fact. Note that US patent 6,383,410 is a continuation of US patent 6,280,651. The cover of US patent 6,280,651 was incorrectly printed.

21. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Examiner George A. Goudreau whose telephone number is (703) -308-1915. The examiner can normally be reached on Monday through Friday from 9:30 to 6:00.


If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Examiner Gregory Mills, can be reached on (703) -308-1633. The appropriate fax phone number for the organization where this application or proceeding is assigned is (703) -306-3186.

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Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) -308-0661.



George A. Goudreau/gag

Primary Examiner

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